

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method of representing data comprising the steps of:

representing each root of a set of roots with a value based on a definitional tree-type structure, each root including a plurality of common fields representing levels of the tree-type structure, each specific field included in a specific root having a value corresponding to the meaning of the specific root at a level of the tree-type structure represented by the specific field;

representing a data concept by grouping a plurality of roots selected from the set of roots to form a word, each root of the plurality of roots corresponding to a characteristic of the data concept represented by the word; and

storing the word.
2. (original) The method of claim 1 wherein each word includes a number of bits equal to a number of bits contained in a processor register of a computer for processing the word, each field of the plurality of common fields associated with at least one bit.
3. (original) The method of claim 1 wherein a value of a field at each level of the tree-type structure designates a meaning of each value of a higher level of the tree-type structure.
4. (original) The method of claim 1 wherein certain roots are conventionalized based on values assigned to more basic roots, conventionalized roots being assigned field values based on a predetermined convention.

5. (original) The method of claim 1 wherein a characteristic designated by certain roots is defined based on values assigned to more basic roots.
6. (currently amended) The method of claim 1 wherein the word includes a negation bit associated with a particular root, a value assigned to the negation bit designating that the meaning of the particular root is opposite to the meaning assigned to that value in the tree-type ~~taxonomy~~ structure.
7. (original) The method of claim 1 wherein the word includes a connotative root that indicates how the word is used.
8. (currently amended) A method of representing ~~all~~ concepts comprising the steps of:
representing each particular concept with a plurality of roots, each root of each plurality of roots representing a characteristic of a particular concept;
representing each root with a plurality of fields, each field of each plurality of fields designating meaning of the represented root at a level of significance in a definitional tree-type structure, a top level of significance in the definitional tree-type structure dividing all knowledge into a plurality of abstract subsets of ideas, each lower level of significance in the definitional tree-type structure dividing each higher subset of ideas into a plurality of subsets of ideas, wherein a most significant field of each plurality of fields represents a subset of the plurality of abstract subsets of the top level of the definitional tree, and a least significant field of each plurality of fields represents a subset of ideas at a lowest level of the definitional tree-type structure.
9. (currently amended) The method of claim 8 wherein each field includes at least one bit and ~~the word includes~~ each plurality of roots representing a particular concept is included in a

word having a number of bits equivalent to a number of bits contained in a processor register of a computer for processing the word.

10. (original) The method of claim 8 wherein a certain root of the plurality of roots is conventionalized based on contents of the fields of at least one other root of the plurality of roots.
11. (original) The method of claim 8 wherein the characteristic represented by a certain root of the plurality of roots is defined based on contents of the field of at least one other root of the plurality of roots.
12. (currently amended) The method of claim 8 further including the step of representing whether a meaning designated by a particular root is to be interpreted in ~~the negative~~ negatively.
13. (original) The method of claim 8 wherein the step of representing each particular concept further includes representing each particular concept with a further root that represents a connotation of the particular concept represented.
14. (currently amended) A structure, stored on a readable medium, in which concepts are represented comprising:
 - a plurality of fields, each ~~field of the fields~~ filled with a readable value;
 - a plurality of roots, each root including a fixed number of the plurality of fields, each root including a most significant field ~~in which the~~ filled with a readable value ~~designates~~ designating a general abstract concept and a field of lesser significance ~~in which the~~ filled with a readable value ~~designates~~ designating a narrower concept within the general abstract concept designated within the most significant field, whereby each root designates a concept indicated by the value of each field included in the root; and

a word including the plurality of roots, each concept designated by each root of the plurality of roots designating a different characteristic of the word.

15. (original) The method of claim 14 wherein the plurality of roots are selected from a predetermined set of roots.

16. (currently amended) The method of claim 14 wherein the predetermined set of roots is organized based upon a ~~definitionan~~ definitional tree-type structure with the readable value of the most significant field designating a concept at a highest level of the tree-type structure and the readable value of the field of lesser significance designating a concept at a lower level of the tree-type structure.

17. (original) The method of claim 14 wherein the word include a further root designating how the word is used.

18. (currently amended) A computer apparatus for determining meaning from a machine vocabulary comprising: a processor including a register for ~~simultaneously~~ receiving bits of data simultaneously, the processor programmed to process words received in the register, each word representing a particular concept, each word including a plurality of roots, each root included in a word defining a particular characteristic of the concept represent by the word, each root including a plurality of fields, a first field in every root designating a class of general abstract ideas including the particular characteristic, a second field in every root designating a subset of ideas within the class including the particular characteristic, each field represented by bits of data forming words received at the register, the processor programmed to determine the value of the bits of data in each field and to associate the value of in each field with a meaning of that field.

19. (original) The apparatus of claim 18 wherein the register simultaneously receives a number of bits of data equivalent to the number of bits of data in all the fields of each word.

20. (original) The apparatus of claim 18 wherein the processor associates the value of a field of a particular root by reference to a value of at least a certain field of a different root included in the same word.

21. (currently amended) A computer apparatus for determining meaning from a machine vocabulary comprising:

means for retrieving words of digital data each representing a concept;

means for processing the words by determining a value of each of a plurality of fields included in each one of the words, the values of a plurality of fields representing general abstract classes of ideas of each of a plurality of roots of the concept, the values of a further plurality of fields representing ~~subclass~~ subclasses of the general abstract ~~class~~ classes of ideas of each of the plurality of roots, each of the plurality of roots designating a characteristic of the concept represented by the word, each word processed based on the meaning represented by the value of at least one field.

22. (original) The apparatus of claim 21 wherein each word has a fixed number of bits of digital data and the means for processing includes a processor having a register that accepts each bit of a word simultaneously.

23. (original) The apparatus of claim 21 wherein mean for processing includes a processor for determining the values of an additional plurality of fields in a further root representing how the word is used.

24. (original) A method for storing data comprising:

forming a tree-type taxonomy for word roots, the upper level of the taxonomy divided into a plurality of classes, each class divided into a plurality of subclasses at a lower level of the taxonomy, each level of the taxonomy represented by a field in each word root;

combining a plurality of the word roots to form a word, each word root forming the word representing a characteristic of the word; and

storing the word.

25. (original) The method of claim 24 wherein taxonomy for word roots includes conventions whereby the class and subclasses represented by fields of a word root are altered based on the fields of other word roots combined with the word root to form the word.

26. (currently amended) The method of claim 24 wherein the characteristic of represented by at least one root combined to form the word is designated by reference to other root combined to form the word.

27. (original) The method of claim 24 wherein the step of combining includes combining a series of negation bits with the word roots to form the word, the negation bits indicating whether each root is interpreted in the negative.

28. (original) The method of claim 24 wherein the step of combining includes combining a further root with the plurality of the word roots, the further root representing how the word is used.